

## ABSTRACT

An electrographic sensor unit and method for determining the position of a user selected position thereon. The electrographic sensor unit includes a layer of a conductive material having an electrical resistivity and a surface, at least three spaced apart contact points electrically interconnected with a layer of conductive material, a processor connected to the spaced apart contacts and disposed to selectively apply a signal to each of the contact points, and a probe assembly, that includes either a stylus of a flexible conductive layer spaced apart from the layer, coupled to the processor with the stylus disposed to be positioned by a user in vicinity of a user selected position on the surface of the layer, or that position being selected with a user's finger on the flexible layer and to receive signals from the layer when the contact points have signals selectively applied thereto. The user selected position is determined by the processor from signals received from the stylus, or flexible layer, each in relation to a similar excitation of different pairs of the contact points under control of the processor. The conductive layer may be either two or three dimensional and may be a closed three dimensional shape. There may also be multiple layers with the processor being able to discern on which of those layers the user selected position is located. Further, provision is made to correct the calculated coordinates of the selected position for variations in contact resistance of each of the contact points individually. Additionally, a nonconductive skin having selected graphics printed thereon, such as a map, can be placed over the layer and the processor further convert the calculated coordinates of the selected position to coordinates that relate to the graphical information printed in the skin, and even electro-nically (e.g., audio or visual) present information to the user relative to the graphical location selected as the selected position.